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EXAMINER

OLSEN, KAJ K

ART UNIT

PAPER NUMBER

1753

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/966,352

Applicant(s)

HERBERT, BEN

Examiner

Kaj Olsen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 8-23 is/are rejected.
- 7) ☒ Claim(s) 4-7 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 September 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). ____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____ 6) ☐ Other:

DETAILED ACTION

Drawings

1. The drawings are objected to because fig. 2, 4, 5, 7 and 8 all show arrows pointing to portions of the figures, but there are no reference numbers associated with these arrows. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Objections

2. Claims 4-7 are objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim cannot depend from another multiple dependent claim (claim 3 for claims 4-7 and/or claims 4-6 for claims 5-7 respectively). See MPEP § 608.01(n). Accordingly, the claims have not been further treated on the merits.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1-3, 13, 16, 20 and 21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

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5. In claim 1, it is unclear if the “planar support means” of step b is the same thing as the “support means” of step a.

6. Claim 1 also utilizes passive language to define the set forth method. In particular, step c specifies “after the first separation has been carried out”. Similarly, step d specifies transferring sample “under the influence of the electric field”. Are these steps actual limitations of the method? The examiner has interpreted them as being actual steps, but requests the applicant utilize positive and explicit recitation of the steps of the invention.

7. With respect to claim 13, it is unclear how to interpret what could reasonably be construed as being “widened electrode bridge portions”. Widened with respect to what?

8. With respect to claim 16 “is opens” is grammatically awkward.

9. In claims 20 and 21, it is unclear how to interpret the final limitation of either of these claims because they appear to be drawn to how the device is used and not the actual device itself.

Claim Rejections - 35 USC § 102

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

11. Claims 8, 14-16 and 20-23 are rejected under 35 U.S.C. 102(b) as being anticipated by Hochstrasser (USP 5,773,645).

12. With respect to claim 8, Hochstrasser discloses an apparatus for two-dimensional electrophoresis comprising a first electrophoretic medium 26 comprising an elongate strip, a

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second electrophoretic medium 17 that is spaced apart from the first medium and carried on a single generally planar support means 12 (col. 4, lines 11-63). Hochstrasser also discloses the presence of a thin film cover means 25 that encloses the elongate strip (col. 4, lines 44-50).

13. With respect to claim 14 (those limitations not covered above), Hochstrasser also discloses a cassette shell having the planar support surface (fig. 1) as well as a space between the first and second electrophoretic media (col. 4, lines 27-30).

14. With respect to claim 15, see col. 4, line 64 through col. 5, line 13.

15. With respect to claim 16, opening the cover is only the intended use of the apparatus and the intended use need not be given further due consideration in determining patentability.

16. With respect to claims 20 and 21 (those limitations not covered above with respect to claims 8 and 14), removing the cover is only the intended use of the apparatus and the intended use need not be given further due consideration in determining patentability. In addition, fluid can be restrained in the space between the first and second electrophoretic media (fig. 3 and col. 5, lines 47-63).

17. With respect to claim 22, Hochstrasser discloses separating a sample into two dimensional electrophoresis utilizing the set forth structure of the claim (see rejections for claims 8 and 14 above). Hochstrasser further discloses the step of removing the cover 25 and introducing sample and a non-electrically conducting fluid into the first medium (which includes space between the two media) and conducting an electrophoretic separation in the first medium (col. 4, line 64 through col. 5, line 36). Once the first separation is complete, Hochstrasser teaches replacing the non-electrically conducting fluid with a bridging material and then conducting a second electrophoretic separation (col. 5, line 47 through col. 6, line 7).

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18. With respect to claim 23, see col. 4, line 64 through col. 5, line 13.

Claim Rejections - 35 USC § 103

19. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

20. Claims 9, 10 and 17-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hochstrasser in view of Tocci (USP 3,715,295).

21. With respect to claims 9, 10, 17 and 18, Hochstrasser disclosed all the limitations of the claims, but did not disclose the use of metal foils for the thin film. Tocci discloses in an alternate electrophoretic device that metal foils can also be utilized to seal an electrophoretic gel prior to use (col. 3, lines 1-7). It would have been obvious to one of ordinary skill in the art at the time the invention was being made to utilize the teaching of Tocci for the apparatus of Hochstrasser because both plastic and metal films are art recognized equivalent means for sealing a gel before use, and the substitution of one known sealing means for another requires only routine skill in the art.

22. With respect to claim 19, both Tocci and Hochstrasser teach the use of plastic films. Although these references do not explicitly disclose electrically conducting plastics, the main purpose of the plastics in each reference is to provide a seal for the gel strip (see Tocci, col. 3, lines 1-7; see Hochstrasser, col. 4, lines 44-50). It would have been obvious to one of ordinary skill in the art to utilize electrically conductive plastic foils (as long as that conductive plastic

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provides the desired sealing characteristic) because the substitution of one known material for another requires only routine skill in the art.

23. Claims 11-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hochstrasser.

24. Hochstrasser set forth all the limitations of the claims 11 and 12, but did not explicitly recite the specified dimensions for the gap and side walls. However, it would have been obvious to one of ordinary skill in the art at the time the invention was being made to utilize a 1-4 mm gap between the media or a 5 mm gap about the ends of the first medium, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

25. With respect to claim 13 as best understood, see col. 5, lines 18-23.

Allowable Subject Matter

26. Claims 1-3 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action.

27. The following is a statement of reasons for the indication of allowable subject matter:

The prior art does not disclose nor render obvious the process set forth by claim 1 in its entirety, with particular attention to the step of tilting the support means at an angle to the horizontal followed by the flushing of the liquid out of the gap.

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Conclusion

28. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Shevitz and Itoh disclose alternate two-dimensional electrophoresis apparatuses.

29. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kaj Olsen whose telephone number is (703) 305-0506. The examiner can normally be reached on Monday through Thursday from 7:00 AM-4:30 PM. The examiner can also be reached on alternate Fridays.

If attempts to reach the examiner are unsuccessful, the examiner's supervisor, Mr. Nam Nguyen, can be reached at (703) 308-3322.

When filing a fax in Group 1700, please indicate in the header "Official" for papers that are to be entered into the file, and "Unofficial" for draft documents and other communications with the PTO that are not for entry into the file of this application. This will expedite processing of your papers. The fax number for regular communications is (703) 305-3599 and the fax number for after-final communications is (703) 305-5408.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist, whose telephone number is (703) 308-0661.



Kaj K. Olsen
Patent Examiner
AU 1753
July 31, 2003